

In the Claims

Claims 1, 5, 32, 37, 44-45, 48-49, and 51 are cancelled.

Claims 2, 6, 8, 10-11, 33-35, 38, 46-47, 50, and 52-54 have been amended as shown below. Underlines indicate insertions; ~~strikeouts~~ or double brackets [[]] indicate deletions.

1. (Cancelled)
2. (Currently amended) The article stacking apparatus of claim [[1]] 6 further comprising a plurality of protuberances provided on an inner surface of the barrel operative to agitate thermoformed open-mouth articles deposited within the barrel from a thermoforming operation to encourage stacking of the articles.
3. (Original) The article stacking apparatus of claim 2 wherein each protuberance is provided by a rod affixed along the inner surface of the barrel.
4. (Original) The article stacking apparatus of claim 3 wherein a plurality of the rods extend in a helical array within the barrel.
5. (Cancelled)

6. (Currently amended) ~~The article stacking apparatus of claim 5 further comprising~~

An article stacking apparatus, comprising:

a barrel;

a frame configured to support the barrel for rotation in a recumbent position;

a motor; and

a drive mechanism coupling together the frame and the motor to rotate the barrel to agitate cups within the barrel for stacking into accumulated configurations; and

a pneumatic conveyor provided adjacent the exit end configured to deliver a stream of air toward the entrance end to urge individual, unstacked articles toward the entrance end;

wherein, responsive to rotation of the barrel, the helical array of rods interact with articles in the barrel to drive the accumulating articles from an entrance end to an exit end of the barrel.

7. (Original) The article stacking apparatus of claim 6 wherein the pneumatic conveyor comprises a fan and an air duct configured to eject a stream of air in an upstream direction within the barrel.

8. (Currently amended) The article stacking apparatus of claim [[1]] 6 further comprising an entrance chute provided at the entrance end of the barrel.

9. (Original) The article stacking apparatus of claim 8 wherein the entrance chute slopes downwardly into the barrel.

10. (Currently amended) The article stacking apparatus of claim [[1]] 6 further comprising a stacked article conveyor provided adjacent the exit end of the barrel.

11. (Currently amended) The article stacking apparatus of claim [[1]] 6 wherein the frame supports the barrel for rotation about a horizontal axis.

12-31. (Cancelled)

32. (Cancelled)

33. (Currently amended) The method of claim [[32]] 35 further comprising providing projections extending radially inward of an inner surface of the barrel, and agitating the articles by engaging the projections with the articles while rotating the drum.

34. (Currently amended) The method of claim [[32]] 35 wherein the barrel is supported along a horizontal axis.

35. (Currently amended) ~~The method of claim 32 further comprising~~
A method for stacking open-mouthed articles, comprising:
providing a reclining barrel;
accumulating open-mouthed articles in the barrel;
rotating the barrel to manipulate orientation of the articles to stack the
articles; and
providing a helical array of projections on an inner surface of the barrel, and
moving the articles from an entrance end towards an exit end in response to the helical
array of projections engaging the articles as the barrel rotates.

36. (Original) The method of claim 35 further comprising providing a pneumatic
conveyor adjacent an exit end of the barrel, and further comprising moving individual
articles and relatively small stacks of articles from the exit end towards the entrance end of
the barrel using a stream of air generated by the pneumatic conveyor.

37. (Cancelled)

38. (Currently amended) The cup stacking device of claim ~~[[37]]~~ 46 wherein the
barrel comprises a cylindrical drum, and the concave portion comprises an inner cylindrical
surface of the drum.

39. (Previously presented) The cup stacking device of claim 38 wherein the drum is rotated about a central axis of the drum.

40. (Previously presented) The cup stacking device of claim 39 further comprising a plurality of projections extending radially inwardly of the inner surface of the drum and configured to interact with articles being tumbled in the drum to impart agitation of the articles and encourage nesting together of the articles into stacks.

41. (Previously presented) The cup stacking device of claim 40 wherein each projection comprises a rod affixed to the inner surface of the drum.

42. (Previously presented) The cup stacking device of claim 41 wherein the rod is configured in a helical configuration within the drum.

43. (Previously presented) The cup stacking device of claim 42 wherein, responsive to rotation of the drum, the helical configuration of rods operate as impeller blades of an Archimedes screw to drive stacks of articles within the drum from an entrance end of the drum to an exit end of the drum.

44. (Cancelled)

45. (Cancelled)

46. (Currently amended) The ~~cup stacking device of claim 45 further comprising~~
an

A cup stacking device, comprising:

a barrel having a concave portion configured to support cups, the barrel
including a drum carried for rotation and having an array of helical rods provided on an
inner surface of the drum operative to agitate articles within the drum to encourage
stacking of the articles, and further operative to drive the articles and stack of articles from
an entrance end to an exit end of the drum;

a frame configured to support the barrel in a recumbent position for rotation
of the concave portion;

a motor;

a drive mechanism coupling together the frame and the motor to rotate the
barrel to manipulate orientation of the cups within the barrel to stack the cups;

an article conveyor communicating with an exit end of the barrel and
operative to move stacks of articles retrieved from the exit end of the barrel; and

a pneumatic conveyor provided adjacent the exit end of the drum and
configured to entrain and move individual articles from the exit end toward the entrance
end for further agitating and stacking.

47. (Currently amended) The cup stacking device of claim [[38]] 46 wherein the drum is recumbent with a horizontal, central axis.

48. (Cancelled)

49. (Cancelled)

50. (Currently amended) The method of claim [[49]] 52 wherein the projections comprise a helical array of rods affixed to the inner surface of the drum.

51. (Cancelled)

52. (Currently amended) ~~The method of claim 51 further comprising~~
A method for stacking articles, comprising:
providing a recumbent drum;
delivering stackable, open-mouthed articles into the drum; and
rotating the drum so as to present the articles along a rolling inner surface of
the drum and facilitate stacking of the articles;
providing projections along an inner surface of the drum, and while rotating
the drum, agitating the articles by impinging the articles against the projections to further
facilitate stacking of the articles responsive at least in part to the agitation;

moving the articles from an entrance end toward an exit end of the drum at least in part by impinging the articles against the projections; and

generating a stream of air from the exit end toward the entrance end of the drum to encourage movement of individual articles and relatively small stacks of articles from the exit end toward the entrance end for further agitation and stacking.

53. (Currently amended) The method of claim [[48]] 52 further comprising conveying stacks of the articles from the drum to a collection device.

54. (Currently amended) The method of claim [[48]] 52 further comprising agitating the articles while rotating the drum to further encourage stacking of the articles.